**Problem Set # 4 From Solubility to Ksp**

The Ksp is a measure of the *solubility* of an ionic salt. The larger the value of the Ksp, the greater the solubility of the salt (***if you are comparing ionic salts with the same number of aqueous ions!)***

You can only calculate a Ksp if the solution is saturated. Only saturated salt solutions are in equilibrium. You can calculate the Ksp from the solubility of a salt, since the solubility represents the concentration required to saturate a solution.

1. Calculate the Ksp for CaCl2 if 2.00x102 g of CaCl2 is required to saturate 100.0mL of solution.

 2. Calculate the Ksp for AlCl3 if 100.0g is required to saturate 150.0 mL of a solution.

3. The solubility of SrF2 is 2.83 x 10-5 M. Calculate the Ksp.

4. The solubility of GaBr3 is 15.8 g per 100.0 mL. Calculate the Ksp.

5. The solubility of Ag2SO4 is 1.33 x 10-7g per 100.0 mL. Calculate the Ksp.

 6. If 2.9 x 10-3 g of Ca(OH)2 is needed to saturate 250.0 mL of solution, what is the Ksp?

7. Calculate the Ksp of CuSO4 • H2O if 63.5g is required to saturate 100.0 mL of solution.

**Calculate the concentrations of all ions in each solution.**

8. 0.50 M Al2(SO4)3 (aq)

9. 25.7g (NH4)3PO4 (aq) in 250.0mL H2O.

 10. 210g CoCl2 • 6H2O in 800.0mL H2O.